

Troublesome adhesions were prevented by use of electrically charged gold leaves. Wisdom teeth were transplanted to replace first molars. The use of an antibiotic in the feed of pet birds reduced the danger of psittacosis.

There were epidemics of measles, encephalitis and meningitis in the United States, but thanks to immunizations, some of the old plagues, like polio, were reduced to almost insignificant proportions.

### Communication by Vibration

Psychologists continued to discover new facts. One research problem concerns the attempt to communicate language through the skin by vibrations, which met with some success.

The ability of some persons to differentiate colors through their fingers received further substantiation.

A Japanese scientist catalogued the noises used by monkeys to communicate among themselves in the hope that these studies will aid exploration of the origin and growth of language.

In the universe far beyond the solar system, it was suggested that gravity reactions are the fuel for strange objects called quasars, which are puzzling sources of light and radio waves. Combined oxygen and hydrogen atoms, hydroxyl molecules, were found near the center of the Milky Way.

Twenty observatories around the world were named as recipients of a new image tube that photographs stars electronically and makes any existing telescope the equal of triple its size. A National Academy of Sciences report called for doubling the country's ground-based astronomical facilities in the next decade.

Man's delving into his past revealed new archaeological treasures ranging from what may be the oldest habitation of man in Europe, a camp of rhinoceros hunters in Greece dating from 40,000 to 50,000 years ago, to a large burial tomb of the 7th century B.C., uncovered near Sadis in Turkey.

Civilization's first pins were found in a Tigris River excavation.

• Science News Letter, 86:387 December 19, 1964

### OCEANOGRAPHY

## Antarctic Seals Studied In Chamber Under Ice

➤ A BOX suspended in the frigid Antarctic Ocean beneath five feet of solid ice has been used by U.S. scientists to study the sounds seals make when they "talk" to each other.

The noises seals make sound like whistles, buzzes, beeps and chirps, biologists from Woods Hole Oceanographic Institution, Massachusetts, and the New York Zoological Society reported.

The observers listened to sounds piped in from hydrophones outside the steel box, which was six feet high and four feet wide. Range of the hydrophones was more than five miles, and visibility through the water was more than 200 feet.

The recorded sounds are now being analyzed. The animals responsible for the noises were Weddell seals, which are 11 feet long and weigh 1,300 pounds when adult.

• Science News Letter, 86:388 December 19, 1964

### GENERAL SCIENCE

## Ten Top Science Advances Chosen by Science Service

➤ THE TEN TOP science, medicine and technology advances in 1964 as selected by Dr. Watson Davis, director of Science Service, are:

1. Close-up photographs of the moon taken by the U.S. Ranger 7.

2. Three cosmonauts orbited earth in Russian "Sunrise" satellite.

3. Report incriminating cigarettes as cause of lung cancer and other diseases.

4. Growing awareness of dangers of population explosion, spread of birth control and lessening of Catholic condemnation.

5. Discovery of brightest, most violent and heaviest sources of light and radio waves, very distant quasi-stellar sources (quasars), possibly fueled by collapse of gravity waves.

6. Explosion of atom bomb by Red China.

7. Discovery of omega minus meson, heaviest inhabitant of atomic nucleus.

8. Prevention of adhesions in surgery by use of electrically charged gold leaves.

9. Discovery of brown matter on air bubbles in ocean as vast source of marine food.

10. New kind of material produced by impregnating wood with plastic and hardened by gamma radiation.

• Science News Letter, 86:388 December 19, 1964

### PUBLIC HEALTH

## U.S. People Healthier This Year Than Last

➤ AMERICAN PEOPLE were healthier during the 12 months ending in June 1964 than in the year before, figures from the U.S. Public Health Service's Health Interview Survey indicate.

The estimated 387 million acute illnesses and injuries requiring either medical attention or restriction of daily activities from July 1963 through June 1964 showed a reduction of 13.4 million from the preceding year.

A substantial decline in influenza and the common cold occurred during the year, Charles S. Wilder, division of health interview statistics, said. A rise in the number of injuries and common childhood diseases tended to cancel out a large part of the decline, however.

Measles and rubella, the German measles disease, accounted for much of the increase in childhood diseases.

The rate of injury in automobile crashes and other types of moving vehicle accidents was the same as that during the previous period, but injuries at work, in the home and in "other" events increased.

More than half the number of persons interviewed had seen a physician within six months of the time of the interview, and only 1.3% had never made a visit to a doctor.

The Health Interview Survey is done in cooperation with the U.S. Bureau of the Census to sample civilian noninstitutional population of the United States. Interviews are conducted every week.

• Science News Letter, 86:388 December 19, 1964

# Questions

**AERONAUTICS**—What new system makes it possible to land a plane without a pilot? p. 386.

**ARCHAEOLOGY**—What did a discovery in Israel reveal about smelting processes used 30 centuries ago? p. 389.

**BEHAVIORAL SCIENCES**—What new information has been found regarding "paradoxical" sleep? p. 390.

**BIOTECHNOLOGY**—What material is used for making a new artificial bone? p. 396.

**ENGINEERING AND TECHNOLOGY**—How will photochromics help astronauts? p. 392.

**GENERAL SCIENCE**—Up to how many feet was the earth's crust elevated by the Alaskan earthquake? p. 387.

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